

Assisting Students to Use EVIDENCE *as a Part of Reflection on Practice*

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NURSES PRACTICING TODAY are required to anticipate and manage patients in a highly technological and increasingly complex and uncertain health care environment (1). As educators, we recognize that the future is now. Many nurse educators are beginning to deconstruct long-held assumptions and values imbedded in content-heavy curricula. We understand that the accelerating pace of knowledge generation and dissemination requires that our students learn the process of thinking like a nurse. • This article explores the relationship between evidence-based nursing and reflection on practice and offers strategies to help students pose searchable, answerable, clinical questions. In this way, students begin the process of learning to use evidence as part of their reflection on practice.

ABSTRACT The practice environment is increasingly complex and requires that nursing students and graduates possess the ability to make evidence-based decisions. The factual overload current in many curricula, however, can suppress the reflective and critical thinking skills required for the development of searchable, answerable questions, the first step in the evidence-based nursing process. In order to prepare students to become users of evidence, nurse educators must nurture habits of mind that cultivate reflection on practice. This article examines the relationship between evidence-based nursing and reflection on practice and describes how faculty can assist students to use evidence as a part of their reflection on practice.

The Nature of Evidence-based Nursing The recent wave of interest in evidence-based nursing (EBN) evolved from the evidence-based practice (EBP) movement that began in the 1970s and is now recommended by the Institute of Medicine as the framework for all clinical decisions made by health professionals (2). In examining what EBN is and is not, several consistent themes emerge. EBN is a client care approach that uses problem-solving methods to integrate the best research evidence with client preferences and values and clinician expertise (3-7) within the context of local environments and available resources (7,8).

The EBN inquiry begins with the posing of a question. It continues with the locating of information, evaluating the sources of information, and evaluating the quality of that information. Finally, it involves bringing that information back to the bedside to inform practice. While the process of EBN is broader than mere research utilization, research utilization is a part of the process.

Reflection on Practice/Reflective Thinking Reflection is one of many innovative teaching approaches and models for nursing education (9) and a key component of mindful practice (10,11).

Reflective thinking is a lived activity that accommodates, and even invites, uncertainty and surprise. It involves paying attention, on purpose, to the moment and requires habits of mind that accompany person-centered clinical practice, that is, attentive observation, critical curiosity, informed flexibility, and presence (11).

Attentive observation reaches beyond the realm of recipe knowledge and suggests that a nurse disrupt habitual patterns of thought and behavior and use a unitary perspective when assessing a client or clinical situation. This mindset helps the nurse see the familiar in new ways and is pivotal to what Maudsley and Strivens (12) describe as reflection-in-action, an important element in clinical decision making.

The nurse uses reflection-in-action as a strategy for solving client events and problems, thus placing clinical events within the broader context of reflective inquiry. For example, the nurse might ask, "What is happening here?" posing this question without naming what is happening until it has been understood. The nurse listens actively and includes the client's perspective in the naming of what is understood.

Much of attentive observation is implicit in the concept of crit-

ical curiosity, which is characterized by flexibility, persistence, and a suspension of judgment, especially when a client or clinical experience surprises and calls forth accommodation to uncertainty. At times of uncertainty, the nurse's therapeutic presence, that is, the undistracted attention on the client and compassion that emerges from insight, is facilitated.

The unpredictable nature of a client's illness or response to an illness moves the nurse to ask a series of questions: "What is being observed, and what surprises me about this client/event?" "What personal feelings surround this surprising phenomenon, and/or am I ignoring any relevant data?" (11). Habits of "meta-cognitive monitoring"/self-observation (12) and reflection (10,11) bring one's own thought processes into consciousness and form the basis for the integration of reflection on practice and the EBN process.

The Relationship Between EBN and Reflection on Practice

Reflection on practice supports client-centered nursing care and is vital in developing EBN practice. By focusing on client values and beliefs, it honors the client's perspective (3,8,9).

The EBN process requires thinking like a nurse, that is, using reflective inquiry to pose clinical questions that can be answered (13). At the center of this inquiry is self-observation, which leads to an examination of personal perspectives and biases. Such meta-cognitive behavior helps the nurse choose whether to place information in the foreground or background — the first step in the EBN process.

Background questions serve as the foundation for searchable foreground questions and build on background knowledge (14). An example of a background question might be, "Do client beliefs affect health care actions?" The answer can be found in nursing textbooks that discuss the relationship between culture and health outcomes.

Foreground questions are searchable and answerable. Here the foreground question might be, "In a population of older, Hispanic-Americans receiving visiting nurse services, does availability of a Spanish-speaking home health aid decrease unplanned visits to providers?" To answer this question requires an investigation of the effects of an intervention on health behaviors in a specific population. Client perspectives, which include values and beliefs, are at the center of the inquiry and provide the context for formulating the foreground question.

There may appear to be tension between the processes of reflective thinking and EBN. EBN encompasses a focus on the hypothetico-deductive reasoning process, while reflective thinking comes from self-revelation, a less exact process. However, applying best practices to making a clinical decision requires that four steps be taken (3):

1. Ask a clinical question raised by a client care situation.
2. Collect evidence to answer the question.

3. Appraise that evidence critically.

4. Integrate only the most relevant evidence with clinical expertise and client preferences.

If we place clinical problem solving within the broader context of reflective inquiry, this reflection-in-action can be seen as rigorous in its own right (12). In short, a nurse begins the EBN process with the act of reflection, which sets in motion the diagnostic reasoning process.

Use of self-reflection does not negate EBN, but rather encourages all types of knowledge in order to make clinical decisions. These include ethical, personal, and aesthetic knowledge: ethical knowledge that clarifies personal values and beliefs; personal knowledge that assesses the therapeutic thrust of a nurse-client relationship; and aesthetic knowledge as situated in the nurse's understanding of a client situation and the concerned responses to it (9). Although more difficult to measure, these tacit and personal ways of knowing are no less important than the EBN process, especially if we include and honor the client's values and preferences.

Helping Students Use Evidence as a Part of Reflection on Practice

To create an environment that facilitates reflection on practice as the portal to the use of evidence, we need to recall learning to our lives as faculty, increasing our attention to student learning and away from teaching (15). By using a learning-centered focus, faculty model the very behaviors needed to nurture a client-centered care ethos in students, an ethos that moves them from passive receivers of information to independent, self-directed, active participants in the use of evidence. Evidence use requires the parallel process of critical thinking, which involves reflection, evaluation, and critical appraisal (7).

Table 1 provides a blueprint for building competency in the use of evidence as part of reflection on practice during the last two years, the professional nursing phase, of a baccalaureate nursing curriculum. The table shows a parallel sequence for building semester-specific competencies in EBN as developed by Ciliska (8) and Burke et al. (16) and reflection on practice and presence as formulated by Epstein (10,11).

Table 2 presents a clinical log assignment for using evidence as a part of reflection on practice with increasing complexity over four semesters. Reflective journaling has been shown to increase critical thinking in nursing students by improving pattern recognition skills, relationship formation, and the ability to generate hypotheses and explanations and to draw conclusions (7). The author uses the clinical log as a strategy to increase reflection, critical thinking, and evidence use in senior community health students. Once students identify a clinical event that requires determining priorities, they search for and select one relevant, evidence-based article that is then applied to practice.

Table 1. Building Competency in Using Evidence as Part of Reflection on Practice

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4
1. Frame clinical questions and research common databases, e.g., CINAHL, PubMed	1. Learn critical appraisal of interventions/systematic reviews/qualitative research by searching databases, e.g., Cochrane Library	1. Learn to appraise practice guidelines/search sources such as National Guidelines Clearing House	1. Integrate change theory by considering how a piece of evidence can be used to change practice on a particular unit. In all clinical courses, identify and incorporate evidence into care
2. Begin building competence in accessing appropriate/relevant information	2. Begin building competence in accessing research-based evidence relevant to identified clinical problems	2. Critically appraise research evidence to apply findings to practice; select appropriate clinical problems	2. Read/evaluate research reports/data-based articles; synthesize findings; evaluate their applicability to practice
3. Learn attentive observation of oneself/client/problem; through these observations, learn what to place in the foreground or relegate to background (prioritizing in care actions)	3. In addition to attentive observation, learn critical curiosity, i.e., seeing the world as it is, including not only one's personal perspective but also that of client	3. Expand reflection to include informed flexibility/beginner's mind, i.e., seeing situations freshly with willingness to inspect continually one's own habits of mind/holding contradictory ideas simultaneously	3. Complete reflective process by including presence, i.e., unrestricted attention to task/person, using compassion based on insight and knowledge

As noted in the tables, the development of competence in EBN and reflection on practice, and the use of logs to report clinical stories using nursing science, are recommended for inclusion earlier in the curriculum. Burns and Foley (3) suggest that the earlier the introduction of EBN (and, parenthetically, reflection on practice), the better. Early exposure facilitates interest in EBN practice, an increase in critical thinking abilities, motivation toward lifelong learning, and a fuller appreciation of the application of clinical research to practice.

In the first semester faculty can help students begin to think like a nurse by introducing what EBN is and how the EBN process can be used to foster reflection on practice. Since students at this level are not yet clinically focused, they cannot readily put clinical problems in a searchable format (17), but they can report on their own thoughts and feelings about a clinical event. By encouraging them to not only report findings but tell their client-centered stories, faculty practice what Epstein (10) describes as priming, that is, establishing the expectation that students report their reflections about client encounters.

At the second-semester level, faculty can assist students to use the PICO format (Patient, Intervention, Comparison intervention, Outcome question) to formulate a focused clinical question as they reflect on practice. Working with faculty, and, it is hoped, with a science librarian, helps students figure out methods of searching for evidence relevant to the foreground information (18). Learning about best practices reported in the literature helps students develop insight about their own practice.

By the third semester, students can tolerate differing clinical

perspectives: theirs, those of other clinicians, and that of the client. This is a propitious time for faculty themselves to ask reflective questions, to invite ambiguity so that students discover their own answers. Students in the third semester have had enough clinical exposure and work on research to critique and appraise evidence and think independently.


In the fourth semester, students are ready to own their knowledge and put it into action, while simultaneously observing themselves in action. It is at this point, according to Epstein, that a student is "personally transformed from the role of student to the role of a novice practitioner" (11, p. 15). The learned skill of EBN has become known by its exercise in practice, and in the process the novice practitioner has become more fully present to the client through reflection on practice.

Summary These are crucial times for nursing education, the profession, and client outcomes. To think like a nurse in the contemporary health care environment, nurses must use critical thinking skills to appraise evidence. It is suggested here that evidence use can be taught as a part of reflection on practice and that reflective inquiry is the portal to becoming a user of evidence.

Both reflection on practice and EBN are concepts that attempt to respond to change and uncertainty. They are not mutually exclusive processes, but rather, they reinforce each other and have the potential to deepen both faculty and student satisfaction with teaching and learning. The task of the teacher is to nurture habits of mind that cultivate reflection on practice and to create environments where students are free to make hunches and seek

Table 2. The Log Assignment for Using Evidence as a Part of Reflection on Practice

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4
<p>Identify a significant clinical event. With spirit of attentive observation of self/client/event, use textbooks to read about event and/or similar problems. Document what factors belong as background vs foreground data. This initial review of nursing texts begins journey of thinking like a nurse, i.e., accessing information to use evidence to aid self-reflection with client values/beliefs held central in the discovery process.</p>	<p>Begin clinical problem solving about significant clinical event/evidence critical curiosity by asking, "Is this a searchable question? Is this foreground information?"</p> <p>State clinical event as:</p> <p>P – patient</p> <p>I – intervention</p> <p>C – comparison intervention</p> <p>O – outcome question</p> <p>Once the problem is formulated so that it is searchable, include client's view to start critical appraisal of nursing literature. Cite at least two evidence-based references/ discuss how findings might/might not correspond with client preferences.</p>	<p>Pose searchable clinical event question/appraise (contrast/compare) research evidence/practice guidelines for best interventions/practices. Answer question while remaining flexible in thinking, suspending judgment, entertaining divergent views, including those of the client. Cite/critique at least four evidence-based references/discuss correspondence or differences in findings/describe which findings resonate with client's beliefs/value system.</p>	<p>Having posed searchable, clinical event question/appraised, compared, synthesized, evaluated findings, complete reflection on practice process by applying findings from several evidence-based studies, in collaboration with client preferences. Evaluate outcome of evidence implementation, including client input.</p>

solutions to complex problems. The clinical log or journal may be one strategy for using evidence as a part of reflection on practice and preparing our students for unpredictable tomorrows. 

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